UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,938	11/13/2003	Yoshiki Ishii	03560.003397.	6571

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FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER
WERNER, DAVID N

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/705,938	ISHII, YOSHIKI
	Examiner	Art Unit	
	David N. Werner	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *13 January 2008*.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-7,10-17 and 26-30* is/are pending in the application.
        4a) Of the above claim(s) *10-14* is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1,4-7,15-17 and 26-30* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on *13 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.
        Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
        Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
        a)☒ All   b)☐ Some * c)☐ None of:
        1.☐ Certified copies of the priority documents have been received.
        2.☐ Certified copies of the priority documents have been received in Application No. _____.
        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
        Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
        Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

1.　　This Office action for US Patent Application 10/705,938 is responsive to the Request for Continued Examination filed 13 November 2008, in reply to the Advisory Action of 29 October 2008 and the Final Rejection of 25 August 2008. Currently, claims 1, 4–7, 10–17, and 26–30 are pending. Of those, claims 10–14 have been withdrawn from consideration.

2.　　In the Final Rejection of 25 August 2008, claims 1, 7, 15, 17, and 26–30 were rejected under 35 U.S.C. 103(a) as obvious over US Patent 6,324,217 B1 (Gordon) in view of DE 10,035,109 A1 (Cho et al.), and "MPEG-2 Compliant Trick Play Over a Digital Interface" (van Gassel et al.). Claims 4–6 and 16 were rejected under 35 U.S.C. 103(a) as obvious over Gordon in view of Cho and in view of JP 2000-050263 A (Asada et al.).

Continued Examination Under 37 CFR 1.114

3.　　A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 25 August 2008 has been entered.

Response to Arguments

4.   Applicant's arguments with respect to claim 1 have been considered but are moot

in view of the new ground(s) of rejection.   It is respectfully submitted that US Patent

5,987,179 A (Riek), cited but not relied on in the 05 October 2007 Office action

discloses the present invention better than the previously-relied-on prior art.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public
> use or on sale in this country, more than one year prior to the date of application for patent in the United
> States.

Claims 1, 7, 15, 17, and 26–30 are rejected under 35 U.S.C. 102(b) as being

anticipated by US Patent 5,987,179 A (Riek et al.).   Riek et al. discloses a camera that

encodes still images in an MPEG bitstream.   Regarding claim 1, figure 2 illustrates an

embodiment of the Riek et al. apparatus.   Light is input through lens 12 to CCD 14,

which forms images (column 4: lines 15–18).   These images are converted to a

standard digital format in ISO CCIR601 converter 27 (column 4: lines 35–38).   Then,

converter 27 is the claimed "input unit".   As will be shown below, the images received

may be encoded as still images or moving images.   A user may switch from recording

motion images to recording still images with still select button 22 which causes logic and

control unit 32 to encode a still image (column 4: lines 41–50).   Then, still select button

22 is the claimed "control-signal receiving unit", that receives a manually-entered signal (depressing the button) to indicate still image recording, and logic and control unit 32 is the claimed "still-image-recording control circuit". During a still image mode, a still image stored in frame store 29 from converter 27 is selected for encoding (column 4: lines 41–46). Then, frame store 29 is the claimed "still-image-data memory unit". Input selector 28 determines, in response to a signal from logic and control circuit 32, whether to input data directly from converter 27 in case of a motion image mode or frame store 29 in case of a still image mode (column 4: lines 43–50), and so is the claimed "circuit having a switch". MPEG encoder 30 receives a quantization parameter MQUANT to encode images (column 4: lines 51–60), and so, like all other MPEG encoders, has a "quantization unit". Control circuit 32 adjusts the value of MQUANT to create enhanced images if a still image mode is selected (column 4: lines 51–60) by reducing MQUANT to a smaller value or range (column 4: line 61–column 5: line 38). Then, logic and control circuit 32 is the claimed "quantization unit". Encoder 30, which may encode a still image as a series of zero-motion-vector B frames or an enhanced P frame followed by a series of B frames, and encoding the first frame at the conclusion of recording the still image as the next I frame (column 9: line 22–column 10: line 41), is the claimed "encoding unit" that performs the claimed encoding method.

Regarding claim 7, in Riek et al., enhancement pictures in a still image mode may be encoded with zero motion vectors by disabling the motion estimation module (column 7: lines 22–27; column 9: lines 14–17).

Regarding claim 15, in Riek et al., MQUANT is normally allowed to vary between 1 and 31 (column 5: line 4), and is selected at the macroblock level based on a TM5 rate control operation (column 6: line 53–column 7: line 5). This is the "variable quantization characteristic value. However, when a still image is encoded, a selected MQUANT value is used "for all the macroblocks" (column 4: lines 58–60). This is the claimed "constant quantization characteristic value".

Regarding claim 17, in Riek et al., enhancement pictures in a still image mode may be encoded with zero motion vectors by disabling the motion estimation module (column 7: lines 22–27; column 9: lines 14–17).

Regarding claim 26, in Riek et al., storage device 26 that stores compressed motion images and still images (column 4: lines 28–34) is the claimed "recording medium".

Regarding claim 27, in Riek et al., storage device 26 that stores compressed motion images and still images (column 4: lines 28–34) is the claimed "recording medium".

Regarding claim 28, in Riek et al., logic and control circuit 32 selects a single value of MQUANT "for all the macroblocks" in a still image (column 4: lines 54–60). Then, logic and control circuit 32 fixes quantization characteristic value MQUANT for each picture during a still image mode.

Regarding claim 29, in Riek et al., enhancement pictures in a still image mode may be encoded with zero motion vectors by disabling the motion estimation module (column 7: lines 22–27; column 9: lines 14–17).

Regarding claim 30, in Riek et al., storage device 26 that stores compressed motion images and still images (column 4: lines 28–34) is the claimed "recording medium".

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 4–6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riek et al. in view of Japanese Patent Application Publication 2000-050263 A (Asada et al.). Claim 4 is directed to performing quantization based on the product of a quantization matrix and a characteristic value, and claim 16 is directed to storing a quantization characteristic value in a memory. Riek et al. discloses selecting a value of quantization parameter MQUANT for a still image (column 4: line 51–column 5: line 56) but does not describe this as the used with a quantization matrix.

Asada et al. teaches a digital camera that can encode or decode both motion images and still images (abstract), in which the quantization unit for motion images and still images is shared (paragraphs 0040-0044). Regarding claim 4, figure 7 of Asada et al. shows the quantizer. The quantization Q for each DCT value in a block is given by the formula $Q = \dfrac{16 \times D_{(i,j)}}{Qs \times W_{(i,j)}}$, where D is the DCT coefficient for frequency (i,j), Qs is the

quantization characteristic, and W is the value in a quantization matrix for frequency (i,j)

(paragraph 0041).   Regarding claim 5, in Asada et al., Qs controls the number of

"generating signs", or non-zero quantization values.   As shown in Riek et al., it was

known in the art that adjusting a quantization step size, such as quantization parameter

MQUANT, changes the quality of a compressed image.   Since Qs is in the denominator

of the value of the formula for quantized value Q, a smaller value of Qs yields a higher

value of Q, particularly in higher-frequency AC DCT values, and increasing the quality of

the compressed image.   Note that the phrase "dosage child-ized table" throughout the

machine translation of Asada et al., provided with the Non-Final Rejection of 13 April

2007, is a mistranslation of the phrase 「量子化」 which should read "quantization", and

has no meaning regarding quantization step size.

Regarding claim 6, in Asada et al., motion image processing and still image

processing use different quantization tables. Figure 10 shows an embodiment of Asada

et al. in which two quantization tables are stored in a memory (paragraph 0045). In

motion processing, field A stores an Intra quantization table, and field B stores an Inter

quantization table.   In still image processing, field A stores a Luminance quantization

table, and field B stores a Chrominance quantization table (paragraph 0048).

Regarding claim 16, in Asada et al., the quantization tables for still image coding

and motion image coding are stored in a memory (paragraph 0048).

Riek et al. discloses the claimed invention except for quantizing motion images

and still images based on quantization tables. Asada et al. teaches that it was known to

vary the quantization parameters according to pre-defined tables for still images and

motion images. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the quantization method of Asada et al. into the encoder of Riek et al., since Asada states in paragraph 0050 that such a modification would reduce the time to switch between motion image encoding and still image encoding.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David N. Werner whose telephone number is (571)272-9662. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri, can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. N. W./
Examiner, Art Unit 2621

/Mehrdad Dastouri/
Supervisory Patent Examiner, Art Unit 2621